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Sequence Listing was accepted.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)  
217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2009; month=10; day=22; hr=8; min=8; sec=4; ms=596; ]

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Application No: 09445289 Version No: 11.0

**Input Set:****Output Set:**

**Started:** 2009-10-05 17:29:13.431  
**Finished:** 2009-10-05 17:29:16.863  
**Elapsed:** 0 hr(s) 0 min(s) 3 sec(s) 432 ms  
**Total Warnings:** 23  
**Total Errors:** 7  
**No. of SeqIDs Defined:** 63  
**Actual SeqID Count:** 63

Error code	Error Description
E 257	Invalid sequence data feature in <221> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)
W 213	Artificial or Unknown found in <213> in SEQ ID (23)
W 213	Artificial or Unknown found in <213> in SEQ ID (37)
E 257	Invalid sequence data feature in <221> in SEQ ID (38)
E 257	Invalid sequence data feature in <221> in SEQ ID (38)
W 213	Artificial or Unknown found in <213> in SEQ ID (39)
W 213	Artificial or Unknown found in <213> in SEQ ID (40)
W 213	Artificial or Unknown found in <213> in SEQ ID (41)
W 213	Artificial or Unknown found in <213> in SEQ ID (46)
W 213	Artificial or Unknown found in <213> in SEQ ID (47)

**Input Set:**

**Output Set:**

**Started:** 2009-10-05 17:29:13.431

**Finished:** 2009-10-05 17:29:16.863

**Elapsed:** 0 hr(s) 0 min(s) 3 sec(s) 432 ms

**Total Warnings:** 23

**Total Errors:** 7

**No. of SeqIDs Defined:** 63

**Actual SeqID Count:** 63

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (48)
W 213	Artificial or Unknown found in <213> in SEQ ID (49)
W 213	Artificial or Unknown found in <213> in SEQ ID (50) This error has occurred more than 20 times, will not be displayed
E 257	Invalid sequence data feature in <221> in SEQ ID (60)
E 257	Invalid sequence data feature in <221> in SEQ ID (61)
E 257	Invalid sequence data feature in <221> in SEQ ID (61)
E 257	Invalid sequence data feature in <221> in SEQ ID (62)

# SEQUENCE LISTING

<110> MUKAMOLOVA, GALINA V.  
KAPRELYANTS, ARSENY S.  
YOUNG, DANIELLE I.  
KELL, DOUGLAS B.  
YOUNG, MICHAEL

<120> BACTERIAL PHEROMONES AND USES THEREFOR

<130> 60261(49946)

<140> 09445289

<141> 2000-05-11

<150> PCT/GB98/01619

<151> 1998-06-03

<150> GB 9711389.8

<151> 1997-06-04

<150> GB 9811221.2

<151> 1998-05-27

<160> 63

<170> PatentIn Ver. 3.3

<210> 1

<211> 362

<212> PRT

<213> Mycobacterium tuberculosis

<400> 1

Met Leu Arg Leu Val Val Gly Ala Leu Leu Leu Val Leu Ala Phe Ala  
1 5 10 15

Gly Gly Tyr Ala Val Ala Ala Cys Lys Thr Val Thr Leu Thr Val Asp  
20 25 30

Gly Thr Ala Met Arg Val Thr Thr Met Lys Ser Arg Val Ile Asp Ile  
35 40 45

Val Glu Glu Asn Gly Phe Ser Val Asp Asp Arg Asp Asp Leu Tyr Pro  
50 55 60

Ala Ala Gly Val Gln Val His Asp Ala Asp Thr Ile Val Leu Arg Arg  
65 70 75 80

Ser Arg Pro Leu Gln Ile Ser Leu Asp Gly His Asp Ala Lys Gln Val  
85 90 95

Trp Thr Thr Ala Ser Thr Val Asp Glu Ala Leu Ala Gln Leu Ala Met  
100 105 110

Thr Asp Thr Ala Pro Ala Ala Ala Ser Arg Ala Ser Arg Val Pro Leu

115		120		125
Ser Gly Met Ala Leu Pro Val Val Ser Ala Lys Thr Val Gln Leu Asn				
130		135		140
Asp Gly Gly Leu Val Arg Thr Val His Leu Pro Ala Pro Asn Val Ala				
145		150		155
				160
Gly Leu Leu Ser Ala Ala Gly Val Pro Leu Leu Gln Ser Asp His Val				
		165		170
				175
Val Pro Ala Ala Thr Ala Pro Ile Val Glu Gly Met Gln Ile Gln Val				
		180		185
				190
Thr Arg Asn Arg Ile Lys Lys Val Thr Glu Arg Leu Pro Leu Pro Pro				
		195		200
				205
Asn Ala Arg Arg Val Glu Asp Pro Glu Met Asn Met Ser Arg Glu Val				
		210		215
				220
Val Glu Asp Pro Gly Val Pro Gly Thr Gln Asp Val Thr Phe Ala Val				
		225		230
				235
				240
Ala Glu Val Asn Gly Val Glu Thr Gly Arg Leu Pro Val Ala Asn Val				
		245		250
				255
Val Val Thr Pro Ala His Glu Ala Val Val Arg Val Gly Thr Lys Pro				
		260		265
				270
Gly Thr Glu Val Pro Pro Val Ile Asp Gly Ser Ile Trp Asp Ala Ile				
		275		280
				285
Ala Gly Cys Glu Ala Gly Gly Asn Trp Ala Ile Asn Thr Gly Asn Gly				
		290		295
				300
Tyr Tyr Gly Gly Val Gln Phe Asp Gln Gly Thr Trp Glu Ala Asn Gly				
		305		310
				315
				320
Gly Leu Arg Tyr Ala Pro Arg Ala Asp Leu Ala Thr Arg Glu Glu Gln				
		325		330
				335
Ile Ala Val Ala Glu Val Thr Arg Leu Arg Gln Gly Trp Gly Ala Trp				
		340		345
				350
Pro Val Cys Ala Ala Arg Ala Gly Ala Arg				
		355		360

<210> 2  
 <211> 188  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 2  
 Met Pro Val Gly Trp Leu Trp Arg Ala Arg Thr Ala Lys Gly Thr Thr  
 1 5 10 15

Leu Lys Asn Ala Arg Thr Thr Leu Ile Ala Ala Ala Ile Ala Gly Thr  
 20 25 30  
 Leu Val Thr Thr Ser Pro Ala Gly Ile Ala Asn Ala Asp Asp Ala Gly  
 35 40 45  
 Leu Asp Pro Asn Ala Ala Ala Gly Pro Asp Ala Val Gly Phe Asp Pro  
 50 55 60  
 Asn Leu Pro Pro Ala Pro Asp Ala Ala Pro Val Asp Thr Pro Pro Ala  
 65 70 75 80  
 Pro Glu Asp Ala Gly Phe Asp Pro Asn Leu Pro Pro Pro Leu Ala Pro  
 85 90 95  
 Asp Phe Leu Ser Pro Pro Ala Glu Glu Ala Pro Pro Val Pro Val Ala  
 100 105 110  
 Tyr Ser Val Asn Trp Asp Ala Ile Ala Gln Cys Glu Ser Gly Gly Asn  
 115 120 125  
 Trp Ser Ile Asn Thr Gly Asn Gly Tyr Tyr Gly Gly Leu Arg Phe Thr  
 130 135 140  
 Ala Gly Thr Trp Arg Ala Asn Gly Gly Ser Gly Ser Ala Ala Asn Ala  
 145 150 155 160  
 Ser Arg Glu Glu Gln Ile Arg Val Ala Glu Asn Val Leu Arg Ser Gln  
 165 170 175  
 Gly Ile Arg Ala Trp Pro Val Cys Gly Arg Arg Gly  
 180 185

<210> 3

<211> 174

<212> PRT

<213> Mycobacterium leprae

<400> 3

Met Ser Glu Ser Tyr Arg Lys Leu Thr Thr Ser Ser Ile Ile Val Ala  
 1 5 10 15  
 Lys Ile Thr Phe Thr Gly Ala Met Leu Asp Gly Ser Ile Ala Leu Ala  
 20 25 30  
 Gly Gln Ala Ser Pro Ala Thr Asp Ser Glu Trp Asp Gln Val Ala Arg  
 35 40 45  
 Cys Glu Ser Gly Gly Asn Trp Ser Ile Asn Thr Gly Asn Gly Tyr Leu  
 50 55 60  
 Gly Gly Leu Gln Phe Ser Gln Gly Thr Trp Ala Ser His Gly Gly Gly  
 65 70 75 80  
 Glu Tyr Ala Pro Ser Ala Gln Leu Ala Thr Arg Glu Gln Gln Ile Ala  
 85 90 95

Val Ala Glu Arg Val Leu Ala Thr Gln Gly Ser Gly Ala Trp Pro Ala  
 100 105 110

Cys Gly His Gly Leu Ser Gly Pro Ser Leu Gln Glu Val Leu Pro Ala  
 115 120 125

Gly Met Gly Ala Pro Trp Ile Asn Gly Ala Pro Ala Pro Leu Ala Pro  
 130 135 140

Pro Pro Pro Ala Glu Pro Ala Pro Pro Gln Pro Pro Ala Asp Asn Phe  
 145 150 155 160

Pro Pro Thr Pro Gly Asp Val Pro Ser Pro Leu Ala Arg Pro  
 165 170

<210> 4  
 <211> 407  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 4

Met Ser Gly Arg His Arg Lys Pro Thr Thr Ser Asn Val Ser Val Ala  
 1 5 10 15

Lys Ile Ala Phe Thr Gly Ala Val Leu Gly Gly Gly Gly Ile Ala Met  
 20 25 30

Ala Ala Gln Ala Thr Ala Ala Thr Asp Gly Glu Trp Asp Gln Val Ala  
 35 40 45

Arg Cys Glu Ser Gly Gly Asn Trp Ser Ile Asn Thr Gly Asn Gly Tyr  
 50 55 60

Leu Gly Gly Leu Gln Phe Thr Gln Ser Thr Trp Ala Ala His Gly Gly  
 65 70 75 80

Gly Glu Phe Ala Pro Ser Ala Gln Leu Ala Ser Arg Glu Gln Gln Ile  
 85 90 95

Ala Val Gly Glu Arg Val Leu Ala Thr Gln Gly Arg Gly Ala Trp Pro  
 100 105 110

Val Cys Gly Arg Gly Leu Ser Asn Ala Thr Pro Arg Glu Val Leu Pro  
 115 120 125

Ala Ser Ala Ala Met Asp Ala Pro Leu Asp Ala Ala Ala Val Asn Gly  
 130 135 140

Glu Pro Ala Pro Leu Ala Pro Pro Pro Ala Asp Pro Ala Pro Pro Val  
 145 150 155 160

Glu Leu Ala Ala Asn Asp Leu Pro Ala Pro Leu Gly Glu Pro Leu Pro  
 165 170 175

Ala Ala Pro Ala Asp Pro Ala Pro Pro Ala Asp Leu Ala Pro Pro Ala

180	185	190
Pro Ala Asp Val Ala Pro Pro Val Glu Leu Ala Val Asn Asp Leu Pro		
195	200	205
Ala Pro Leu Gly Glu Pro Leu Pro Ala Ala Pro Ala Asp Pro Ala Pro		
210	215	220
Pro Ala Asp Leu Ala Pro Pro Ala Pro Ala Asp Leu Ala Pro Pro Ala		
225	230	235
Pro Ala Asp Leu Ala Pro Pro Ala Pro Ala Asp Leu Ala Pro Pro Val		
245	250	255
Glu Leu Ala Val Asn Asp Leu Pro Ala Pro Leu Gly Glu Pro Leu Pro		
260	265	270
Ala Ala Pro Ala Glu Leu Ala Pro Pro Ala Asp Leu Ala Pro Ala Ser		
275	280	285
Ala Asp Leu Ala Pro Pro Ala Pro Ala Asp Leu Ala Pro Pro Ala Pro		
290	295	300
Ala Glu Leu Ala Pro Pro Ala Pro Ala Asp Leu Ala Pro Pro Ala Ala		
305	310	315
Val Asn Glu Gln Thr Ala Pro Gly Asp Gln Pro Ala Thr Ala Pro Gly		
325	330	335
Gly Pro Val Gly Leu Ala Thr Asp Leu Glu Leu Pro Glu Pro Asp Pro		
340	345	350
Gln Pro Ala Asp Ala Pro Pro Pro Gly Asp Val Thr Glu Ala Pro Ala		
355	360	365
Glu Thr Pro Gln Val Ser Asn Ile Ala Tyr Thr Lys Lys Leu Trp Gln		
370	375	380
Ala Ile Arg Ala Gln Asp Val Cys Gly Asn Asp Ala Leu Asp Ser Leu		
385	390	395
Ala Gln Pro Tyr Val Ile Gly		
405		

<210> 5

<211> 155

<212> PRT

<213> Mycobacterium leprae

<400> 5

Met Pro Gly Glu Met Leu Asp Val Arg Lys Leu Cys Lys Leu Phe Val
1 5 10 15

Lys Ser Ala Val Val Ser Gly Ile Val Thr Ala Ser Met Ala Leu Ser
20 25 30



Thr Ser Thr Gly Met Ala Asn Ala Val Pro Arg Glu Pro Asn Trp Asp  
35 40 45

Ala Val Ala Gln Cys Glu Ser Gly Arg Asn Trp Arg Ala Asn Thr Gly  
50 55 60

Asn Gly Phe Tyr Gly Gly Leu Gln Phe Lys Pro Thr Ile Trp Ala Arg  
65 70 75 80

Tyr Gly Gly Val Gly Asn Pro Ala Gly Ala Ser Arg Glu Gln Gln Ile  
85 90 95

Thr Val Ala Asn Arg Val Leu Ala Asp Gln Gly Leu Asp Ala Trp Pro  
100 105 110

Lys Cys Gly Ala Ala Ser Asp Leu Pro Ile Thr Leu Trp Ser His Pro  
115 120 125

Ala Gln Gly Val Lys Gln Ile Ile Asn Asp Ile Ile Gln Met Gly Asp  
130 135 140

Thr Thr Leu Ala Ala Ile Ala Leu Asn Gly Leu  
145 150 155

<210> 6

<211> 176

<212> PRT

<213> Mycobacterium tuberculosis

<400> 6

Met His Pro Leu Pro Ala Asp His Gly Arg Ser Arg Cys Asn Arg His  
1 5 10 15

Pro Ile Ser Pro Leu Ser Leu Ile Gly Asn Ile Ser Ala Thr Ser Gly  
20 25 30

Asp Met Ser Ser Met Thr Arg Ile Ala Lys Pro Leu Ile Lys Ser Ala  
35 40 45

Met Ala Ala Gly Leu Val Thr Ala Ser Met Ser Leu Ser Thr Ala Val  
50 55 60

Ala His Ala Gly Pro Ser Pro Asn Trp Asp Ala Val Ala Gln Cys Glu  
65 70 75 80

Ser Gly Gly Asn Trp Ala Ala Asn Thr Gly Asn Gly Lys Tyr Gly Gly  
85 90 95

Leu Gln Phe Lys Pro Ala Thr Trp Ala Ala Phe Gly Gly Val Gly Asn  
100 105 110

Pro Ala Ala Ala Ser Arg Glu Gln Gln Ile Ala Val Ala Asn Arg Val  
115 120 125

Leu Ala Glu Gln Gly Leu Asp Ala Trp Pro Thr Cys Gly Ala Ala Ser  
130 135 140

Gly Leu Pro Ile Ala Leu Trp Ser Lys Pro Ala Gln Gly Ile Lys Gln  
145 150 155 160

Ile Ile Asn Glu Ile Ile Trp Ala Gly Ile Gln Ala Ser Ile Pro Arg  
165 170 175

<210> 7

<211> 154

<212> PRT

<213> Mycobacterium tuberculosis

<400> 7

Met Thr Pro Gly Leu Leu Thr Thr Ala Gly Ala Gly Arg Pro Arg Asp  
1 5 10 15

Arg Cys Ala Arg Ile Val Cys Thr Val Phe Ile Glu Thr Ala Val Val  
20 25 30

Ala Thr Met Phe Val Ala Leu Leu Gly Leu Ser Thr Ile Ser Ser Lys  
35 40 45

Ala Asp Asp Ile Asp Trp Asp Ala Ile Ala Gln Cys Glu Ser Gly Gly  
50 55 60

Asn Trp Ala Ala Asn Thr Gly Asn Gly Leu Tyr Gly Gly Leu Gln Ile  
65 70 75 80

Ser Gln Ala Thr Trp Asp Ser Asn Gly Gly Val Gly Ser Pro Ala Ala  
85 90 95

Ala Ser Pro Gln Gln Gln Ile Glu Val Ala Asp Asn Ile Met Lys Thr  
100 105 110

Gln Gly Pro Gly Ala Trp Pro Lys Cys Ser Ser Cys Ser Gln Gly Asp  
115 120 125

Ala Pro Leu Gly Ser Leu Thr His Ile Leu Thr Phe Leu Ala Ala Glu  
130 135 140

Thr Gly Gly Cys Ser Gly Ser Arg Asp Asp  
145 150

<210> 8

<211> 99

<212> PRT

<213> Streptomyces coelicolor

<400> 8

Ile Arg Thr Ala Ala Val Thr Leu Val Ala Ala Thr Ala Leu Gly Ala  
1 5 10 15

Thr Gly Glu Ala Val Ala Ala Pro Ser Ala Pro Leu Arg Thr Asp Trp  
20 25 30

Asp Ala Ile Ala Ala Cys Glu Ser Ser Gly Asn Trp Gln Ala Asn Thr  
 35 40 45  
 Gly Asn Gly Tyr Tyr Gly Gly Leu Gln Phe Ala Arg Ser Ser Trp Ile  
 50 55 60  
 Ala Ala Gly Gly Leu Lys Tyr Ala Pro Arg Ala Asp Leu Ala Thr Arg  
 65 70 75 80  
 Gly Glu Gln Ile Ala Val Ala Glu Arg Leu Ala Arg Leu Gln Gly Met  
 85 90 95  
 Ser Ala Trp

<210> 9  
 <211> 438  
 <212> PRT  
 <213> Bacillus subtilis

<400> 9  
 Met Gly Glu Arg Glu Gly Arg Val Asp Ser Leu Leu Asp Thr Leu Tyr  
 1 5 10 15  
 Asn Leu Ser Glu Glu Lys Glu Ala Phe Phe Ile Thr Gln Lys Met Lys  
 20 25 30  
 Lys Leu Phe Ser Val Lys Leu Ser Lys Ser Lys Val Ile Leu Val Ala  
 35 40 45  
 Ala Cys Leu Leu Leu Ala Gly Ser Gly Thr Ala Tyr Ala Ala His Glu  
 50 55 60  
 Leu Thr Lys Gln Ser Val Ser Val Ser Ile Asn Gly Lys Lys Lys His  
 65 70 75 80  
 Ile Arg Thr His Ala Asn Thr Val Gly Asp Leu Leu Glu Thr Leu Asp  
 85 90 95  
 Ile Lys Thr Arg Asp Glu Asp Lys Ile Thr Pro Ala Lys Gln Thr Lys  
 100 105 110  
 Ile Thr Ala Asp Met Asp Val Val Tyr Glu Ala Ala Lys Pro Val Lys  
 115 120 125  
 Leu Thr Ile Asn Gly Glu Glu Lys Thr Leu Trp Ser Thr Ala Lys Thr  
 130 135 140  
 Val Gly Ala Leu Leu Asp Glu Gln Asp Val Asp Val Lys Glu Gln Asp  
 145 150 155 160  
 Gln Ile Asp Pro Ala Ile Asp Thr Asp Ile Ser Lys Asp Met Lys Ile  
 165 170 175  
 Asn Ile Glu Pro Ala Phe Gln Val Thr Val Asn Asp Ala Gly Lys Gln  
 180 185 190

Lys Lys Ile Trp Thr Thr Ser Thr Thr Val Ala Asp Phe Leu Lys Gln  
195 200 205

Gln Lys Met Asn Ile Lys Asp Glu Asp Lys Ile Lys Pro Ala Leu Asp  
210 215 220

Ala Lys Leu Thr Lys Gly Lys Ala Asp Ile Thr Ile Thr Arg Ile Glu  
225 230 235 240

Lys Val Thr Asp Val Val Glu Glu Lys Ile Ala Phe Asp Val Lys Lys  
245 250 255

Gln Glu Asp Ala Ser Leu Glu L